

## SYSTEM DESCRIPTION

### 1. SYSTEM DESCRIPTION

#### HINT:

- The skid control ECU is a single unit with ABS & TRACTION ACTUATOR.
  - The yaw rate sensor and deceleration sensor are combined in a single unit. This unit and steering Angle sensor communicate with the skid control ECU through CAN communication.
- (a) **ABS**  
(Anti-lock Brake System)  
The ABS helps prevent the wheels from locking when the brakes are applied firmly or when braking on a slippery surface.
- (b) **EBD**  
(Electronic Brake force Distribution)  
The EBD control utilizes ABS, realizing proper brake force distribution between front and rear wheels in accordance with driving conditions.  
In addition, when braking while cornering, it also controls the brake forces of the right and left wheels, helping to maintain vehicle behavior.
- (c) **BA**  
(Brake Assist)  
The primary purpose of the brake assist system is to provide an auxiliary brake force to assist the driver who cannot generate a large enough brake force during emergency braking, thus helping to maximize the vehicle's brake performance.
- (d) **TRC**  
(Traction Control)  
The TRC system helps prevent the drive wheels from slipping if the driver presses down on the accelerator pedal excessively when starting off or accelerating on a slippery surface.
- (e) **VSC**  
(Vehicle Stability Control)  
The VSC system helps prevent the vehicle from slipping sideways as a result of strong front wheel skid or strong rear wheel skid during cornering.

CAN Communication (□: Receiving signal from Skid Control ECU)

Related ECU/Parts	Signal
Steering Sensor	<input type="checkbox"/> Steering angle signal
Yaw rate sensor/Deceleration sensor	<input type="checkbox"/> Yaw rate signal <input type="checkbox"/> G-sensor signal

### 2. ABS with EBD & BA & TRC & VSC OPERATION

- (a) The skid control ECU calculates vehicle stability tendency based on the signal of sensors, speed sensor, yaw rate sensor and steering angle sensor. And it judges whether the control of engine output torque by electronic control throttle and of wheel brake pressure by brake actuator will start or not by the calculation results.
- (b) The SLIP indicator blinks and the skid control buzzer sounds to inform the driver that the VSC system is operating. The SLIP indicator also blinks when TRC is operating, and the operation being performed is displayed.

### 3. FAIL SAFE FUNCTION

- (a) When a failure occurs in the ABS & BA & TRC & VSC systems, the ABS warning lamp and the VSC warning lamp come on and ABS & BA & TRC & VSC operations are prohibited. In addition to this, when there is a failure that disables the EBD operation, the brake warning lamp also comes on and the EBD operation is prohibited.
- (b) If some control is prohibited due to a malfunction during its operation, that control will be cut off gradually not to change stability of vehicle suddenly.